

**TIRE PRESSURE MONITORING DEVICE****ABSTRACT**

A low tire pressure monitoring device that is affixed to a tire valve stem and methods of using the same. The monitoring device comprises a housing having a counter-pressure chamber, a main pressure chamber, and a flexible membrane that separates the two chambers. The monitoring device is calibrated by trapping the tire's initial air pressure in the counter-pressure chamber. The air pressure within the main pressure chamber is equivalent to the air pressure within the tire. Over the course of time, the air pressure within the tire and concomitantly the air pressure within the main pressure chamber decreases. When the pressure in the counter-pressure is greater than the pressure within the main pressure chamber, the flexible membrane touches and completes an electrical circuit and a warning signal is emitted.